

WHAT IS CLAIMED IS:

1. A method of manufacturing an optical waveguide, comprising:
 - (a) forming a convex part on a substrate;
 - (b) discharging droplets onto an upper surface of the convex part to form a precursor of an optical waveguide part; and
 - (c) hardening the precursor to form an optical waveguide part.
2. The method of manufacturing an optical waveguide according to Claim 1, in (a), the convex part being formed on the substrate by providing a base member on the substrate.
3. The method of manufacturing an optical waveguide according to Claim 2, in (a), the convex part being formed on the substrate by forming a groove in the substrate.
4. The method of manufacturing an optical waveguide according to Claim 1, the precursor being hardened by adding energy.
5. The method of manufacturing an optical waveguide according to Claim 1, the discharging of the droplets being performed according to an ink jet method.
6. The method of manufacturing an optical waveguide according to Claim 1, further comprising:
 - (d) covering the optical waveguide part with a layer that has a lower refractive index than the optical waveguide part.
7. The method of manufacturing an optical waveguide according to Claim 1, further comprising:
 - (e) detaching the optical waveguide part from the substrate.
8. The method of manufacturing an optical waveguide according to Claim 1, further comprising:
 - (f) adjusting the wettability for the droplets of an upper surface of the convex part before the droplets are discharged.
9. A method of manufacturing an optical waveguide, comprising:
 - (a) forming a first convex part on a substrate;
 - (b) forming a second convex part on the substrate in parallel with the first convex part;
 - (c) discharging first droplets onto an upper surface of the first convex part to form a precursor of an optical waveguide part;
 - (d) hardening the precursor of the optical waveguide part to form the optical waveguide part;

(e) forming a precursor for a covering layer that is formed on an upper surface of the second convex part and covers the optical waveguide part; and

(f) hardening the precursor for a covering layer to form the covering layer with a lower refractive index than the optical waveguide part.

10. The method of manufacturing an optical waveguide according to Claim 14, in (e), the precursor for a covering layer being formed by discharging second droplets onto the optical waveguide part and the upper surface of the second convex part.

11. The method of manufacturing an optical waveguide according to Claim 9, in (b), two of the second convex parts are formed and the first convex part being disposed between the two second convex parts.

12. The method of manufacturing an optical waveguide according to Claim 9, the first and second droplets having a property whereby the droplets can be hardened by applying energy.

13. The method of manufacturing an optical waveguide according to Claim 9, the hardening of the covering layer being performed by adding energy.

14. The method of manufacturing an optical waveguide according to Claim 9, the first and second droplets having a property whereby the droplets are hardened by applying energy.

15. The method of manufacturing an optical waveguide according to Claim 9, the discharging of the first and second droplets being performed according to an ink jet method.

16. An optical waveguide, comprising:
a convex part provided on a substrate; and
an optical waveguide part provided on the convex part.

17. The optical waveguide according to Claim 16,
the convex part having a lower refractive index than the optical waveguide part.

18. The optical waveguide according to Claim 16,
the covering layer being formed around the optical waveguide, and the refractive index of the convex part and the refractive index of the covering layer are approximately equal.

19. The optical waveguide according to Claim 16,
the convex part being integrally formed with the substrate.

20. The optical waveguide according to Claim 16,

a cross-section of the optical waveguide part being in the shape of a truncated circle or a truncated oval.

21. The optical waveguide according to Claim 16,
a cross-section of the optical waveguide part being in the shape of a circle or an oval.
22. The optical waveguide according to Claim 16,
an upper surface of the convex part being a curved surface.
23. The optical waveguide according to Claims 16,
an angle made between an upper surface of the convex part and a surface that contacts the upper surface on a side part of the convex part being acute.
24. The optical waveguide according to Claim 16,
an upper part of the convex part being formed in an inversely tapered shape.
25. The optical waveguide according to Claim 16,
the optical waveguide being buried under a layer with a lower refractive index than the optical waveguide part.
26. An optical waveguide, comprising:
a first convex part provided on a substrate;
an optical waveguide part provided on an upper surface of the first convex part;

a second convex part disposed in parallel with the first convex part; and
a covering layer that covers an optical waveguide part and is provided in part on an upper surface of the second convex part.
27. The optical waveguide according to Claim 26,
the optical waveguide includes two of the second convex parts and the first convex part being disposed between the two second convex parts.
28. A circuit board, comprising:
the optical waveguide according to Claim 16;
an IC; and
an optical element.
29. An optical module, comprising:
the optical waveguide according to Claim 16.
30. An optical transfer apparatus, comprising:
the optical module according to Claim 29.